

# 

### (43) International Publication Date 22 May 2003 (22.05.2003)

**PCT** 

## (10) International Publication Number WO 03/043085 A3

- (51) International Patent Classification7: H01L 23/498. 23/66, H05K 1/02
- (21) International Application Number: PCT/EP02/13209
- (22) International Filing Date: 25 October 2002 (25.10.2002)
- (25) Filing Language:

×

English

(26) Publication Language:

English

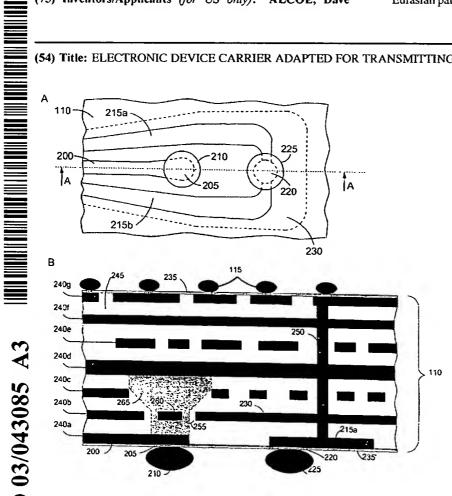
- (30) Priority Data: 01480110.4 13 November 2001 (13.11.2001) EP
- (71) Applicant (for all designated States except MC, US): INTERNATIONAL BUSINESS MACHINES COR-PORATION [US/US]; New Orchard Road, Armonk, NY
- (71) Applicant (for MC only): COMPAGNIE IBM FRANCE [FR/FR]; Tour Descartes, 2, avenue Gambetta, La Défense 5, F-92400 Courbevoie (FR).
- (75) Inventors/Applicants (for US only): ALCOE, Dave

[US/US]; 1600 Butternut Drive, Vestal, NY 13760-1230 (US). NOWAK, Ronald [US/US]; 1324 Echo Road, Vestal, NY 13850 (US). PREDA, Francesco [IT/IT]; Via Don Minzoni, 9, I-24030 Mozzo (IT). OGGIONI, Stefano, Sergio [IT/IT]; Via Caravaggio, 15, I-20145 Besana Brianza (IT).

- (74) Agent: DE PENA, Alain; Compagnie IBM France, Direction de la Propriété Intellectuelle, F-06610 La Gaude (FR).
- (81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW.
- (84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),

[Continued on next page]

## (54) Title: ELECTRONIC DEVICE CARRIER ADAPTED FOR TRANSMITTING HIGH FREQUENCY SIGNALS



(57) Abstract: An electronic device carrier (110) adapted for transmitting high-frequency signals, including a circuitized substrate with a plurality of conductive layers (240a to 240g) insulated from each other, the conductive layers being arranged in a sequence from a first one of the conductive layers (240a) wherein a plurality of signal tracks (200) each one ending with a contact area (205) for transmitting a high-frequency signal are formed, and a reference structure (215a, 215b, 230) connectable to a reference voltage or ground for shielding the signal tracks the reference structure includes at least one reference track (230) formed in a second one of the conductive layers (240b) adjacent to the first conductive layer and at least one further reference track formed in one of the conductive layers (240d) different from the first and second conductive layer, a portion of each signal track excluding at least the area corresponding to the orthographic projection of associated contact area being superimposed in plan view to a corresponding reference track and at least a part of the area

corresponding to the orthographic projection of the contact area associated to each signal track being superimposed in plan view to a corresponding further reference track with interposition of a floating conductive track, i.e. a track not connected to any signal, reference voltage or ground track.

Best Available Conv

European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

#### Declaration under Rule 4.17:

of inventorship (Rule 4.17(iv)) for US only

#### Published:

with international search report

- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments
- (88) Date of publication of the international search report: 6 November 2003

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.



Intertional Application No PCT/EP 02/13209

	•		PCT/EP 02/13209		
A. CLASSI	IFICATION OF SUBJECT MATTER H01L23/498 H01L23/66 H05K	<u> </u>	101/11 02/13203		
IPC /	H01L23/498 H01L23/66 H05K	(1/02			
A one ordina to	A International Patent Classification (IPO)				
	o International Patent Classification (IPC) or to both national of SEARCHED	assincation and IPC			
Minimum de IPC 7	ocumentation searched (classification system followed by classification sy	ssification symbols)			
1,0,	TIOLE TIOSK				
Documenta	tion searched other than minimum documentation to the exter	nt that such documents are include	ded in the fields searched		
	ata base consulted during the international search (name of	data base and, where practical,	search terms used)		
EPO-In	ternal, PAJ				
C. DOCUM	ENTS CONSIDERED TO BE RELEVANT				
Category *	Chation of document, with indication, where appropriate, of	Relevant to ctalm No.			
A	PATENT ABSTRACTS OF JAPAN vol. 018, no. 661 (E-1644),		1-11		
	14 December 1994 (1994-12-14)				
	-& JP 06 260773 A (OKI ELECTR LTD), 16 September 1994 (1994				
	abstract	-09-10)			
A	US 5 691 568 A (CHOU TAI-YU	ET AL)	1-11		
	25 November 1997 (1997-11-25)				
	figures 5A-G 				
A	EP 0 834 922 A (INTERGRAPH CO 8 April 1998 (1998-04-08)	RP)	1-11		
	column 8, line 5 -column 9, l				
	figure 4A				
		-/			
X Furti	her documents are listed in the continuation of box C.	χ Patent family m	embers are listed in annex.		
Special ca	tlegories of cited documents :	*T* later document publis	shed after the international filing date		
	ent defining the general state of the art which is not dered to be of particular relevance	or priority date and dited to understand invention	not in conflict with the application but the principle or theory underlying the		
filing d		"X" document of particular	ar relevance; the claimed invention ed novel or cannot be considered to		
which	ent which may throw doubts on priority claim(s) or is ched to establish the publication date of another n or other special reason (as specified)	involve an inventive	step when the document is taken alone ar relevance; the claimed invention		
'O' docume	not other special reason (as specially) ent referring to an oral disclosure, use, exhibition or means	document is combin	cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled		
'P' docume	ant published prior to the international filing date but aan the priority date claimed	in the art.			
Date of the	actual completion of the international search		Date of mailing of the international search report		
1	4 August 2003	25/08/20	003		
Name and r	mailing address of the ISA	Authorized officer	Authorized officer		
	European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040. Tx. 31 651 epo nl,				
	Fax: (+31-70) 340-3016	Edmeades	, м		



Intervious Application No PCT/EP 02/13209

		PCT/EP 02/13209	
	ation) DOCUMENTS CONSIDERED TO BE RELEVANT		
legory °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.	
	US 5 336 855 A (MAY KLAUS P ET AL) 9 August 1994 (1994-08-09) column 4, line 43 -column 6, line 27;	1-11	
	column 4, line 43 -column 6, line 27; figure 3		
	<del></del>		
i			
:			
i			
ļ			
	•		
	·		
	•		



Information on patent family members

Intantional Application No					
PCT/EP	02/13209				

Patent document cited in search report		Publication date		Patent family member(s)	Publication date
JP 06260773	Α	16-09-1994	NONE		
US 5691568	Α	25-11-1997	JP	10056106 A	24-02-1998
EP 0834922	А	08-04-1998	US EP DE DE DE DE EP JP US	5338970 A 0834922 A2 69412678 D1 69412678 T2 69431678 D1 0617466 A2 7169880 A 5499445 A	16-08-1994 08-04-1998 01-10-1998 01-04-1999 12-12-2002 28-09-1994 04-07-1995 19-03-1996
US 5336855	A	09-08-1994	DE DE EP JP	4100238 A1 59206202 D1 0495540 A2 4307799 A	09-07-1992 13-06-1996 22-07-1992 29-10-1992